



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,811	02/18/2004	Cheng-Qun Gui	1857.2620000	6835

26111 7590 04/14/2005

STERNE, KESSLER, GOLDSTEIN & FOX PLLC
1100 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

MATHEWS, ALAN A

ART UNIT PAPER NUMBER

2851

DATE MAILED: 04/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/779,811

Applicant(s)

GUI ET AL.

Examiner

Alan A. Mathews

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-9, 11 and 12 is/are rejected.
- 7) ☒ Claim(s) 4-6 and 10 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12-28-04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 2 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 2, the phrase "preferably substantially zero intensity" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d). In claim 3, "and different to the other states" is indefinite. What does the expression "other states" refer to in the claims? Does it refer to other of the additional states?

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 7 - 9, 11, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Mei (U. S. Patent No. 6,473,237). Figure 2 and column 3, lines 15-67, disclose an illumination system including element 32. An array of individually controllable elements 38 to impart a projection beam with a pattern could be a DMD (see column 8, lines 49-53). Element 44 is the

Art Unit: 2851

substrate (subject) table with substrate (subject) 42. Figure 11 and column 7, lines 60-67, and column 8, lines 1-32, disclose a DMD 38 and a projection system including an array of focusing elements 154 (microlens array). Column 8, lines 24-26, disclose an embodiment where **a single microlens may accommodate multiple pixel elements of the DMD**. This is the same thing as reciting that each focusing element (microlens) directs the radiation in the patterned beam from a plurality of individually controllable elements (multiple pixel elements of the DMD). Element 170a would be an area of the substrate that would be exposed. With respect to claim 2, column 3, lines 49-58, disclose the typical On (first intensity) and Off (second intensity) state of each mirror. With respect to claims 7, 8, 11, and 12, figure 14 and column 10, lines 26-34, disclose changing the intensity by turning on and off the corresponding pixel element. The actuator includes scanning motor 55 for stage 44 (see column 6, lines 21-32). It is also noted that in a **different interpretation of Mei**, the two optical elements 40 in figure 2 could be considered an array of focusing elements such that each focusing element directs the radiation in the patterned beam from a plurality of the individually controllable elements to thereby expose an area of the substrate, which would read on claims 1 and 9.

4. Claims 1, 2, 7 - 9, 11, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Brauch et al. (U. S. Patent No. 6,002,466). Brauch et al. discloses in figure 1 and column 9, lines 15 – 61, an array of individually controllable elements (laser units) $10_1 - 10_N$. A substrate table 38 supports substrate 36. A projection system for projecting the patterned beam onto a target portion of the substrate includes $22_1 - 22_N$ and optical elements in 26 and 32. The optical elements in 26 is considered to be an array of focusing elements such that each focusing element

Art Unit: 2851

directs the radiation in the patterned beam from a plurality of the individually controllable elements $10_1 - 10_N$ to thereby expose an area of the substrate. With respect to claim 8, element 50 is the controller. Column 9, lines 49-53 states that "Two adjustment drives with distance measuring systems 44 and 46 which can be controlled via a control 50 are provided for the exact displacement of the displaceable table 38 relative to the base 42. Column 10, lines 48-57, disclose that light spot 60_1 can be turned on or off (activated).

Allowable Subject Matter

5. Claims 4 - 6 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and subject to correction of the indefiniteness as recited above without eliminating any of the limitations. The reasons for the indicated allowability of the claims are as follows:

The prior art does not disclose or suggest wherein at least one individually controllable element can be set such that in each of its states it passes a different proportion of the radiation incident on the individually controllable element to the associated focusing element than at least one other individually controllable element that is associated with

the same focusing element in anyone of its states in combination with all the other elements recited in the parent claims to dependent claim 4.

The prior art does not disclose or suggest at least one attenuator for reducing the intensity of the radiation incident on one of the individually controllable elements relative to another individually controllable element associated with the same focusing element in combination with all the other elements recited in parent claim to dependent claim 5.

The prior art does not disclose or suggest at least one attenuator for attenuating the radiation from one of the individually controllable elements such that a portion of the radiation propagating from the individually controllable element that reaches the associated focusing element is less than a further portion of the radiation propagating from at least one other individually controllable element that reaches said focusing element in combination with all the other elements recited in parent claim to dependent claim 6.

The prior art does not disclose or suggest wherein each of the individually controllable elements can be set to at least three states in combination with all the other elements recited in parent claim to dependent claim 10.

Art Unit: 2851

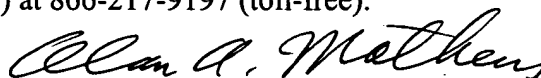
Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patents cited in the PTO-1449 are cited for the same reasons they were cited in Applicant's IDS.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan A. Mathews whose telephone number is (571) 272-2123. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alan A. Mathews
Primary Examiner
Art Unit 2851

AM